

studies, and, given the cost of capital figures used by Petitioners, and the regulatory risks of TELRIC, should be even higher.

C. Verizon VA's Annual Cost Factors Are Reasonable and Forward-Looking.

Petitioners' primary contention concerning Verizon VA's annual cost factors (ACFs) is that they are designed, in one way or another, to recover embedded (and thus allegedly overstated) expenses. But their attack lacks any foundation. AT&T/WorldCom never provide any evidence whatsoever to demonstrate what forward-looking expenses should be, nor do they demonstrate any sound basis for arguing that Verizon VA's estimates are too high. Although both Petitioners operate their own, presumably efficient, networks, neither provided evidence concerning their own expenses. In effect, their entire argument with respect to Verizon VA's annual cost factors is the unsupported refrain that the costs should be lower — because they want them to be. But Verizon VA's expenses, all of which have been adjusted to be forward-looking and which reflect the expenses that would be associated with the forward-looking technology mix for the TELRIC network, are the only informed and realistic estimate on the record before this Commission. Verizon VA's expenses therefore should be accepted.

1. Verizon VA's Cost Models Properly Account for Forward-Looking Reductions in Expenses.

a) Maintenance Expenses

In their first attempt to show that Verizon VA's expenses should be lower, AT&T/WorldCom argue that Verizon VA failed to "recognize any savings in maintenance expenses in a forward-looking environment." (AT&T/WCom Br. at 113.) But this is nothing more than a misrepresentation of Verizon VA's studies and testimony.

As an initial matter, of course, there simply is no general rule that, as Petitioners assert, the “forward-looking network would have vastly lower maintenance costs [than the existing network] as a result of the use of all new equipment.” (AT&T/WCom Br. at 111.) To the contrary, beyond adjustments for productivity and inflation, additional downward adjustment should be required (if at all) only where Verizon VA’s existing plant or technology is outdated or significantly aged. While Petitioners assume imaginary maintenance expense reductions, Verizon VA’s model recognizes that, in most cases, Verizon VA’s plant and technology are of fairly recent vintage and are the precise plant and technology that all parties propose using in the forward-looking network (though in different proportions). Thus, the maintenance costs incurred in 1999 are a reasonable benchmark for the maintenance costs that same type of equipment will incur in the forward-looking network. For example, the digital switches Verizon VA has installed are relatively new. Thus, the 1999 repair and maintenance expenses associated with the digital switch — the same switch that all parties propose for the forward-looking network — is a very reasonable benchmark for the repair and maintenance expenses that would be associated with a new switch in the forward-looking network, once appropriate adjustments are made for productivity and inflation. In fact, as Verizon VA has explained, maintenance expenses associated with the digital switch actually have been *increasing*. (VZ-VA Br. at 65 n.62.) Thus, using 1999 expenses as the proxy for the forward-looking network may in fact understate expenses.

While Verizon VA has been placing up-to-date generations of fiber, digital switches, and other outside plant and technology in the network in recent years, a significant portion of the copper plant in the network may be as much as 30 years old. In this case, Verizon VA agrees with AT&T/WorldCom that the presumably all new copper placed in the forward-looking

TELRIC network likely would have lower repair expenses than copper that is three decades old. Thus, notwithstanding Petitioners' contention that "Verizon makes no adjustment for any reduction in maintenance expenses from replacing outdated equipment" (AT&T/WCom Br. at 113), Verizon VA in fact reduced copper repair expenses in its studies by another 5% above and beyond the productivity adjustment.^{34/} (VZ-VA Ex. 122 at 35 n.29.)

Despite claiming that other adjustments should have been made, AT&T/WorldCom are unable to point to a single example of network or plant they propose for the forward-looking network for which a decrease in maintenance expenses (aside from productivity improvements) reasonably could be expected. Indeed, the one example AT&T/WorldCom proffer to supposedly demonstrate this point — advanced DLC equipment that they allege would reduce field dispatches — is not even relevant to this issue. (AT&T/WCom Br. at 113-14.) The allegedly lower expenses Petitioners tout due to fewer field dispatches with this "advanced DLC" are non-recurring expenses, not maintenance expenses that would be reflected in Verizon VA's ACFs. Verizon VA's recurring cost factors are specifically adjusted so as not to reflect the costs

^{34/} Even while claiming that Verizon VA made no adjustments, Petitioners do in fact recognize this 5% adjustment. (AT&T/WCom Br. at 113.) Verizon VA's assumption that repair expenses may decrease by as much as 5% is realistic and based on the judgment of engineers who have worked with outside plant in the network. (See VZ-VA Ex. 122 at 35 n.29.) AT&T/WCom argue that this reduction is insufficient (see AT&T/WCOM Br. at 185-88), but their analysis is based on a complete misreading of Verizon's documents, which they suggest demonstrate huge decreases in repair when new copper is placed. As Verizon VA has shown, this is plainly wrong. These documents use a standard variable simply for planning and evaluation purposes; they do not describe the results of actual rehabilitation. In any event, even if these documents were at all relevant in showing any actual reductions in expected repair expenses for specific distribution areas with *high* trouble rates, they would certainly not suggest that replacing copper throughout the *entire network* — including in those areas where trouble rates are low or the copper is newer — could produce reductions anywhere *near* those specific, standardized reductions. (See VZ-VA Br. at 73-74.)

associated with field dispatches and other non-recurring activities. (See VZ-VA Br. at 195-96.) Thus, even if Petitioners' vision of next generation DLC equipment had any substance, it would have no impact on the maintenance expenses included in calculating Verizon VA's ACFs.^{35/}

Finally, while Petitioners contend that "Verizon makes no forward-looking adjustment to account for the efficiencies from the pressures of competition and no adjustment to account for the expense reduction from increased use of IDLC in general, and GR-303 in particular" (AT&T/WCom Br. at 113), this statement suggests, at best, a lack of understanding of the ACF process. Verizon VA's studies clearly do reflect that *overall* maintenance expenses in the forward-looking network will be lower, because the forward-looking network uses a more efficient mix of plant and technology and thus uses more of the facilities that have lower associated maintenance costs. (See VZ-VA Br. at 65-66.) Verizon VA used different ACFs for different classes of plant. Because the forward-looking network includes more fiber than the current network, the studies produce the lower expenses associated with a network using a higher portion of fiber — and the lower maintenance costs of fiber would include any cost efficiencies reflected by using IDLC and GR-303.

b) Productivity Adjustments

Verizon VA's cost models include a forward-looking adjustment that "reflects the actual achievable expected productivity gains for the network that truly will be in place in the future

^{35/} In fact, Petitioners do not and cannot point to any carrier who has experienced the field dispatch savings they contend will result from software-controlled next generation DLC equipment. Instead they ask this Commission to rely on nothing more than conjecture that costs *might* go down if the technology performs as they *hope*, as the basis for requiring Verizon VA to accept a lower recovery.

over the planning period.” (Tr. at 3795 (Minion).) AT&T/WorldCom criticize these productivity adjustments on the ground that they are “based on labor productivity gains that have occurred in [Verizon’s] existing network, not gains it would expect to occur in a forward-looking network.” (AT&T/WCom Br. at 114.) This criticism is baffling. The productivity adjustments Verizon VA uses are adjustments for future years, and thus clearly are not productivity advancements that “have occurred.” It is entirely appropriate, however, and indeed necessary, to look to how productivity has improved in the past in order to make any informed judgment about how it will improve in the future.^{36/} And while yesterday’s improvements were not a result of the *particular* advances that will affect tomorrow’s network, the *relative* impact of past technology advances on yesterday’s network can reasonably be expected to be the same as tomorrow’s technology on today’s network. Petitioners certainly have pointed to no groundbreaking advance that will *increase* the pace or level of productivity to any unusual, unexpected degree.

AT&T/WorldCom suggest that a better productivity analysis might have resulted if Verizon VA had performed time and motion studies. (AT&T/WCom Br. at 114.) But as Mr. Minion explained at the hearing, it would be “nearly impossible to do a true time and motion study of all the activities that are required.” (Tr. at 3907.) AT&T/WorldCom certainly have

^{36/} In protesting that Verizon VA has failed to provide support for its historic productivity (AT&T/WCom Br. at 114), Petitioners effectively concede that past productivity percentages are a useful benchmark for future productivity — otherwise, evidence of past productivity could have no relevance. In any event, Mr. Minion testified that Verizon VA’s productivity analysis was performed by Verizon’s business research group (Tr. at 3791-94), which presumably relied on such historic evidence when reporting productivity gains in the past and predicting them for the future.

performed none to support a different productivity factor.^{37/} Similarly, while arguing that Verizon VA should have used a “total factor productivity” approach (AT&T/WCom Br. at 114), Petitioners themselves do not use such an approach or even suggest what the result of such an approach would be. And a total productivity approach, which entails speculating about a whole host of factors such as the prices of raw materials, would produce a far less certain result than a labor productivity analysis.^{38/}

Finally, AT&T/WorldCom raise the point that motivates all their other criticisms: they suggest that Verizon’s productivity adjustment has to be higher, because at the levels estimated by Verizon VA, productivity is roughly offset by an adjustment for inflation. (AT&T/WCom Br. at 115.) But estimating productivity is not just a simple “pick a number” exercise in which a new number can be used merely because the first one produces a result that some parties do not like. It is not unusual for inflation to outpace productivity gains. While in the New York UNE proceeding, as Mr. Minion explained, Verizon was required to use different figures and overstate productivity based on earlier rulings (Tr. at 3804), this does not suggest, as AT&T/WorldCom contend, that using fictional factors would be appropriate in these proceedings. (*See* AT&T/WCom Br. at 115.) In this case, Verizon has used the level of productivity it believes is

^{37/} Of course, one wonders how Petitioners can on the one hand argue that Verizon VA’s productivity factor is based on the embedded network, and simultaneously argue that the Commission should reject Verizon’s factor because it is not based on a time and motion study that necessarily would be performed within the embedded network.

^{38/} AT&T/WorldCom also suggest that Verizon VA should have “disaggregate[d] the expected productivity gains for workers from different types of plant.” (AT&T/WCom Br. at 114.). But it is unclear why Petitioners believe their approach is preferable or more accurate than Verizon VA’s averaged, overall productivity approach; they do not even attempt to support their suggestion, but merely state it in passing. The fact that there are alternative approaches, however, is not evidence that the chosen alternative is wanting.

realistic and the level of inflation that characterizes the telecommunications industry. (Tr. at 3803 (Minion).) There is no reason that either should be manipulated simply to achieve Petitioners' desired end.

2. Verizon VA Appropriately Applies the Forward-Looking to Current Conversion Factor (FLC) to Identify Forward-Looking Expenses.

In its initial brief, Verizon VA demonstrated in detail why application of the Forward-Looking to Current Conversion factor (FLC) is appropriate and produces accurate forward-looking expenses, not embedded expenses. (VZ-VA Br. at 66-69.) Petitioners have raised no new arguments on this issue. Instead, they simply misrepresent the FLC.^{39/}

As Verizon VA has explained, absent the FLC, applying the ACFs to the new, lower TELRIC investment level that will be determined during the course of these proceedings would result in a significant understatement of forward-looking expenses. This is the case because the expenses used in Verizon VA's ACFs have already been adjusted to account for all forward-looking changes that reasonably can be expected. Verizon VA has identified, for example, that the \$150 it costs to repair a piece of equipment today will cost \$100 tomorrow. Whatever ACF ultimately is developed should produce, when applied to the final investment levels, that \$100 in expenses to repair that equipment. The FLC is applied during the ACF development to ensure that the ACF ratios will ultimately produce this result, even when applied to final TELRIC

^{39/} Even the New York Public Service Commission, which has issued an order that dramatically understates Verizon's TELRIC costs in New York, recognized the validity of the FLC, approving Judge Linsider's rejection of the arguments Petitioners raise here. *Order on Unbundled Network Element Rates*, New York Case 98-7-1357 at 61 (Jan. 28, 2002) ("*New York UNE Rate Decision*").

investment, notwithstanding the fact that the ACFs themselves are developed using the different, higher level of embedded investment.^{40/}

Petitioners suggest that a better approach would have been simply to “calculat[e] existing expense-to-investment ratio and assum[e] this ratio will be constant in a forward-looking network.” (AT&T/WCom Br. at 116.) But this assumption is erroneous: in the forward-looking network, investment levels may decrease because, for example, vendor prices are assumed to be lower. However, the fact that equipment prices drop does not cause a linear (or even necessarily any) reduction in the expenses associated with the equipment. A current expense-to-current investment ACF thus is not useful to produce forward-looking expenses. For example, the fact that it currently costs the \$150 mentioned above to repair equipment that costs \$1,500 does not mean that when the manufacturer decides it needs to dump its remaining inventory and provides a 50% discount on the equipment, the \$150 repair cost likewise will be halved.^{41/} Expenses and investment levels are affected by different factors: productivity reduces expenses but may not impact investment levels; manufacturer contracts may reduce investment, but will not affect

^{40/} As Verizon VA explained, the FLC should be recalculated at the end of the proceeding to reflect the actual forward-looking investment discount adopted by the Commission (VZ-VA Br. at 69.) Although Verizon does not endorse the New York Public Service Commission’s recent order, it is noteworthy that it performed precisely such a recalculation, adopting a FLC of 65%. *New York UNE Rate Decision* at 61.

^{41/} In fact, though Petitioners have suggested elsewhere that expenses necessarily decline over time as the network advances, their own brief demonstrates otherwise. In defending their network expense assumptions for the MSM, AT&T/WCom note that their hypothetical network operations expenses for 2002 used in the MSM are just 9% higher than Verizon VA’s 1999 expenses. (AT&T/WCom Br. at 108.) They go on to note, then, that their hypothetical 2002 expenses also are only “1% different from [Verizon VA’s] actual 2000 expenses.” (AT&T/WCom Br. at 108 n.103.) By Petitioners’ own analysis, Verizon VA’s 2000 expenses were *higher* than its 1999 expenses; expenses thus appear to be *increasing* as the network advances, not decreasing.

expenses. (See VZ-VA Br. at 66-69.) To estimate forward-looking expenses, the appropriate ACF ratio is forward-looking expenses to forward-looking investments. The FLC must be applied to determine the forward-looking ACFs in order to account for the relationship between forward-looking investments (as used in Verizon's cost studies) and embedded investments (as used in the denominator of the ACF calculations).^{42/}

3. Verizon's Y2K Expenditures Should Not Be Removed from 1999 Expenses for Calculating ACFs.

In its initial brief, Verizon VA demonstrated the absence of logic in AT&T/WorldCom's argument that Verizon VA's Y2K expenditures should be removed from consideration in calculating ACFs. (VZ-VA Br. at 75.) Petitioners argue that Y2K expenses must be eliminated from the total IS expenses that are considered because that particular cost "will [not] occur annually in a forward-looking network." (AT&T/WCom Br. at 117.) But this may be true of all types of costs throughout Verizon VA's studies. The ACF uses a snapshot of 1999 expenses to identify the company's typical *level* of expenses, from which forward-looking adjustments are made. Verizon VA's 1999 IS budget was not out of the ordinary or larger than expected as a result of funds applied to resolving Y2K issues; a portion of the budget simply was directed to

^{42/} AT&T/WorldCom seek to make the same argument against applying the FLC to Verizon VA's Land and Building (L&B) factor, arguing that land and building costs to house remote terminals and digital switches should decline because the newer equipment will consume less space but that the use of the FLC assumes the resulting cost reductions away. (AT&T/WCom Br. at 117.) But again, even if there were some expectation that newer digital switching equipment, for example, would consume less land and building space in the future, there would be no *proportional* relationship between the cost of the switching equipment and the new land and building costs. The fact that the new switch might cost 10% less does not mean 10% less room would be needed to house the switch. In any event, Verizon VA does not expect changes in land and building costs, which already reflect the amount of land and building needed to house digital switches and advanced remote terminals.

Y2K issues instead of other projects. This allocation was made not because, as Petitioners contend, those other projects were unnecessary (AT&T/WCom Br. at 118 n.108), but because Verizon VA had a limited budget and had to make decisions regarding its application. (See VZ-VA Ex. 122 at 39-40.) Indeed, as Mr. Minion testified, the 2000 IS budget, which of course did not include Y2K expenses, was 10% higher than the 1999 IS budget. (See Tr. at 3826.) And while Petitioners now suggest that this may be a reflection of the fact that the 2000 IS budget was inefficient (AT&T/WCom Br. at 118), they offer nothing in support of their conjecture, which would make sense only if the 2000 budget was *enormously* inefficient so as to have included not just the same dollar amount that AT&T/WorldCom tag for removal as 1999 Y2K-related, but the 10% increase over the entire IS budget for 1999. The far more rational interpretation is that Verizon VA's IS budget is fairly consistent, and that the 1999 budget is, if anything, an understated proxy for future years.

4. Verizon VA Appropriately Included Wholesale Marketing Expenses.

In criticizing Verizon VA's wholesale marketing factor in their brief, AT&T/WorldCom bring home the contradiction that Verizon VA, in its own initial brief, pointed out as the central flaw in their argument: Petitioners simply abandon the forward-looking, hypercompetitive market they generally assume for all their studies and their model.

AT&T/WorldCom attempt to dismiss any claim Verizon VA has for advertising costs associated with the forward-looking network on the ground that Verizon VA "does almost no wholesale advertising today." (AT&T/WCom Br. at 118.) But this is irrelevant. TELRIC costs, including advertising costs, must be based on the fully competitive market of the future. In such a market, in which other facilities-based providers would compete to provide UNEs, Verizon VA clearly would need to engage in wholesale-related advertising to capture as much of the

wholesale market as possible.^{43/} Verizon VA's 1999 retail advertising budget is a reasonable proxy to use for Verizon VA's future wholesale marketing budget. Indeed, the 1999 budget may even understate Verizon VA's wholesale advertising costs, given that the 1999 retail market was not hypercompetitive, whereas the assumed wholesale market is.

5. Verizon VA's Expenses Should Not Be Reduced for Unidentified Merger Savings.

AT&T/WorldCom argue that Verizon VA's expenses should be reduced to reflect savings that Verizon VA allegedly will enjoy from the Bell Atlantic/NYNEX and Bell Atlantic/GTE mergers. As Verizon VA has explained, this argument should be rejected. First, even if the Bell Atlantic/NYNEX merger resulted in savings related to the provision of UNEs,^{44/} these savings would have been reflected in the 1999 base year expenses that Verizon VA used in calculating its ACFs. (VZ-VA Br. at 70.) Second, Verizon VA's cost studies reflect precisely the labor savings that merger synergies produce. (VZ-VA Br. at 70-71.)

AT&T/WorldCom nonetheless argue that Verizon VA's labor productivity gain estimates are insufficient because they "do not include any additional productivity gains from the merger." (AT&T/WCom Br. at 120.) But there is no basis to assume that such productivity gains would increase productivity beyond the level assumed in Verizon VA's forward-looking studies. The productivity factor used in Verizon VA's studies does not assume any specific path to achieving

^{43/} AT&T/WorldCom argue that Verizon VA's example of wholesale advertising — the "Intel inside" campaign — is inapposite because Intel is not a retailer. (AT&T/WCOM Br. at 119.) But their argument completely misses the point — Intel advertises to the public *even though* it is a wholesaler. Its advertising benefits retailers as well as encouraging end users to demand products with Intel components.

^{44/} Many of the savings anticipated in connection with the merger were associated with functions entirely unrelated to Verizon VA's wholesale business. (See VZ-VA Br. at 71 n.68.)

that level of productivity, but simply constitutes a goal; mergers are a tool that companies pursue to achieve the productivity advances they seek. (See VZ-VA Br. at 71.)

Finally, even Petitioners cannot make this argument sound anything more than entirely speculative. Anticipated merger savings do not always materialize given the uncertainty of the surrounding regulatory and economic environment. AT&T itself touted its soon-to-be delivered cable telephony as the prime public interest benefit of its own merger with TCI, and yet almost three years later has failed to make that promise a reality.^{45/} Petitioners have no basis to assert that Verizon VA has or will experience UNE-related productivity gains above and beyond normal productivity advances, nor can they even engage in meaningful conjecture regarding what those gains might be. Their argument should be dismissed.

D. Verizon's EF&I Factors for DLC Equipment Are Reasonable and Reliable.

AT&T/WorldCom do not quarrel with Verizon VA's methodology for calculating the EF&I factors. However, AT&T/WorldCom criticize Verizon VA's EF&I factor for DLC equipment, arguing that it improperly increases the costs of plug-in equipment and overstates costs for individual pieces of equipment. (See AT&T/WCom Br. at 144-45.) This matter was decisively dealt with at the hearing, and Petitioners have shown no reason why recycling their now discredited argument makes it any more effective. As previously explained, the DCPR database, which is used to calculate EF&I factors, allocates virtually no EF&I costs to plug-in

^{45/} For example, AT&T and TCI represented that "AT&T-TCI will invest the several additional billion dollars required to provide telecommunications services over TCI's cable facilities in the near term." AT&T-TCI Joint Reply Comments, *Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations from Tele-Communications, Inc., Transferor To AT&T Corp., Transferee*, CS Docket No. 98-178, at 14 (Nov. 13, 1998).

equipment (other than sales tax). (*See* Tr. at 5081-82 (Minion).) Thus, a plug-in only factor based on DCPR data would severely understate plug-in EF&I costs. Verizon VA's combined EF&I factor for plug-in and hardwired equipment clearly produces a more accurate result.

AT&T/WorldCom also repeat their claim that Verizon VA's EF&I factor is incorrect because the in-place costs for individual pieces of equipment are overstated. (AT&T/WCom Br. at 145.) Petitioners are attacking the DCPR database for failing to do something it was never designed to do. The DCPR database is not intended to provide an accurate reflection of the installation costs for each individual component, as EF&I costs within each account are apportioned across all hardwired equipment associated with that job on a pro rata basis. (Tr. at 4647; 5080-83 (Minion).) However, the database does accurately reflect the total EF&I costs for each account. (*See* VZ-VA Br. at 56-57.)

IV. VERIZON VA'S RECURRING COST STUDIES

As Verizon VA established in its initial brief, the record in these proceedings demonstrates that its recurring cost studies present the best estimate, within the constraints of TELRIC, of its forward-looking costs of providing UNEs in Virginia. Petitioners' brief fails to refute that. Indeed, Petitioners seem more interested in securing the lowest UNE rates possible, regardless of what connection they have to Verizon VA's forward-looking costs. Their late-filed, unsupported attachment to their switching brief, presenting a disingenuous and superficial "analysis" of how much profit they could earn offering UNE-P at Verizon VA's rates (AT&T/WCom Switching Br., Att.), is perhaps the best indication of the ends-based approach

that drives every criticism they make of Verizon VA's recurring cost studies and every counterproposal they advocate.^{46/}

That attachment not only underlines Petitioners' own singleminded and unprincipled approach to "assessing" UNE costs; it also is utterly irrelevant and may not be considered by the Commission in deciding UNE rates. As the Commission itself has observed, the key issue in determining whether UNE costs are TELRIC-compliant is whether "the rates are cost-based, not whether a competitor can make a profit by entering the market."^{47/} Cost-based rates will enable efficient competitors to enter the market and make a profit. But setting rates significantly below costs as Petitioners propose will actually discourage efficient facilities-based entry. When judged in terms of which studies produce rates that more closely approximate the forward-looking costs of providing UNEs in Virginia, Verizon VA's recurring studies are clearly superior to Petitioners' MSM.

^{46/} In addition to being entirely outside the record, Petitioners' one page spreadsheet offers no explanation, let alone support, for the numerous assumptions that necessarily underlie the results shown. They do not, for example, indicate how many minutes of use were assumed to calculate the switching cost or the average mileage used to arrive at the transport costs. Similarly, AT&T/WorldCom offer no explanation for their assumption of only one feature per customer, which significantly understates potential revenues. Indeed, the multistate facilitator for Qwest for seven states in Qwest's region specifically criticized AT&T for offering just such a "simplistic comparison of basis 1FR rates with UNE prices" as "fail[ing] to persuade for many reasons." Facilitator's Report on Public Interest, *In the Matter of the Investigation into Qwest Corporation's Compliance with § 271 of the Telecommunications Act of 1996*, Seven State Collaborative Section 271 Workshops (Oct. 22, 2001).

^{47/} *Kansas-Oklahoma § 271 Order* at 6281 ¶ 92. The D.C. Circuit's decision in *Sprint Communications*, 274 F.3d at 553-54 (D.C. Cir. 2001), expressly rejected the CLECs' suggestion that an alleged price squeeze was relevant to the issue of whether UNE rates are TELRIC-compliant, limiting its analysis instead to § 271's public interest test.

A. Loop Costs

Verizon VA's loop cost studies take the sensible approach of coupling the physical characteristics of a network that has proven capable of serving Verizon's Virginia customers with a variety of forward-looking assumptions about deploying (within the constraints of TELRIC) efficient, cost-effective technology for the network it models. In its initial brief, Verizon VA established that nothing in the record in these proceedings undermines this approach in any manner. To the contrary, Verizon VA demonstrated that its own model was more forward-looking in certain respects than the MSM, and that, when a few of the more wildly speculative inputs in the MSM are adjusted to even some degree, the costs produced by the MSM mirror, if not exceed, those produced by Verizon VA's studies. (VZ-VA Br. at 10-33, 78-116.)

In contrast, AT&T/WorldCom's criticisms of Verizon VA's approach and defense of the MSM are fraught with internal inconsistencies, misrepresentations of the record, and unsupported contentions.^{48/} Where AT&T/WorldCom believe that an instantaneously built network sized to Verizon VA's current demand would reduce costs — as in the case of determining investment per pole — AT&T/WorldCom argue that TELRIC requires that

^{48/} Table 2 in Petitioners' brief, which purports to be a side-by-side comparison of its model with Verizon VA's, underscores Petitioners' willingness to distort the record. For example, although suggesting in the table's "Support Structure Sharing" entry that Verizon VA's model reflects the sharing of "poles only," Petitioners elsewhere have acknowledged that Verizon VA's model in fact does account for conduit sharing as well, and Verizon VA has explained that its costs include buried and underground sharing. (See AT&T/WCom Br. at 176; VZ-VA Ex. 122 at 146). Petitioners also compare the MSM's target fills to Verizon VA's effective fills, notwithstanding their own witness's recognition that the two "don't necessarily match." (Tr. at 4494 (Baranowski).) Petitioners then suggest that this is irrelevant because they contend, "both this Commission and state commissions have determined that vacant units do not need to be included in cost studies." (AT&T/WCom Br. at 145-146, n.135.)

assumption. (AT&T/WCom at 183-84.) But where that approach would increase costs — for example, in determining the appropriate mix of cable structures — AT&T/WorldCom suddenly abandon the instantaneous new network assumption and the added costs that it would entail (in this case, from having to install large amounts of costly buried and underground cable). (AT&T/WCom Br. at 168-73; VZ-VA Br. at 85.) Furthermore, to bolster their arguments, Petitioners repeatedly suggest that Verizon VA has failed to explain the basis for its own position or not disputed certain of their contentions, when the hearings and the record demonstrate that this is not remotely true.^{49/} Finally, the counterproposals Petitioners offer are so entirely hypothetical and self-serving that AT&T/WorldCom almost never even try to support them with evidence from their own networks, the network of any carrier, or anything else that might be relevant.

The result, ultimately, is that the Commission has before it a choice between Verizon VA's rational, forward-looking model whose attributes are informed by real-world experience and operational realities, or a hodgepodge of inconsistent suggestions and arguments, none of which have been tested, and many of which rest on nothing more than unadorned conjecture or blatant misrepresentations of the facts and the record in these proceedings. The choice should be evident.

^{49/} Compare, e.g., AT&T/WCom Br. at 139 (claiming that Verizon does not dispute the possibility of using manual workarounds to unbundle loops through the GR-303 interface), and AT&T/WCom Br. at 164 (claiming that Verizon VA has not explained why spare capacity is needed for administrative spare) with Tr. at 4617-19 (Mr. Gansert's explanation of why Mr. Riolo's proposed GR-303 unbundling solution, including his proposed manual workarounds, is not possible with presently available technology), VZ-VA Ex. 107 at 35 and VZ-VA Ex. 122 at 125-26 (explaining that administrative spare is necessary "to accommodate factors such as maintenance needs, internal network administrative needs, and unexpected demand peaks").

1. Verizon VA's Loop Cost Studies Incorporate Forward-Looking Assumptions about the Deployment of DLC Technologies.

Verizon VA assumed aggressive deployment of fiber-fed DLC technology for its forward-looking loop cost studies, including that more than 82% of all loops would be served by fiber-fed DLC and more than 57% of all loops would be served by IDLC. (VZ-VA Ex. 107 at 97.) As Petitioners concede, this is “an extraordinarily high percentage of fiber and DLC” — higher than Verizon VA anticipates “having as its average blend of technology at any point in the foreseeable life of its assets.” (AT&T/WCom Br. at 16 n.11.) Moreover, Verizon VA's forward-looking network construct assumes far more DLC than the MSM. (Tr. at 4556 (Gansert).) Nonetheless, AT&T/WorldCom argue that Verizon VA's DLC technology assumptions are not sufficiently forward-looking. Specifically, Petitioners contend that the forward-looking network would not include any UDLC and that all IDLC in the forward-looking network would use the GR-303 interface. But Petitioners' arguments ignore the limitations of current GR-303 DLC technology, rely on misrepresentations of the record, and are inconsistent with TELRIC.

a) GR-303 IDLC Technology Cannot Serve as a Substitute for UDLC in the Forward-Looking Network.

Petitioners' arguments concerning whether UDLC must be included in a forward-looking network ignore the two most salient facts about IDLC: (1) it cannot be used to provision certain necessary, non-switched services, and (2) currently available IDLC equipment is not capable of

provisioning standalone unbundled loops.^{50/} (VZ-VA Ex. 107 at 92-93; VZ-VA Ex. 122 at 77; Tr. at 4079-80, 4583, 4617-18 (Gansert).) In an effort to counter this, AT&T/WorldCom suggest that Verizon's "1999 [network] planning document (and the 2000 [network planning] document as well, at least for Verizon West) makes no provision for deployment of UDLC to allow for unbundling, ISDN, or non-switched services." (AT&T/WCom Br. at 137.) But as Petitioners well know, the record, and these very documents themselves, provide quite the opposite. During the hearing, Mr. Gansert pointed out that the first page of the 1999 Network Planning Guideline explicitly refers to using a UDLC interface to unbundle loops: "GR-303 through its TSI capability, could electronically route the customer to a universal shelf. The *universal* shelf could provide connectivity to the MDF." (Tr. at 4177-78; WCom Ex. 119 at 1 (emphasis added).) As Mr. Gansert explained, the document's references to "universal shelf" reflected the clear and unequivocal assumption that "unbundling would take place through [a] universal digital loop carrier" interface. (Tr. at 4178.) Similarly, the 2000 document specifically refers to the use of the UDLC interface on Litespan 2000 DLC systems in Verizon West even where GR-303 is deployed. (WCom Ex. 120 at 6.) In other words, these documents refer not to IDLC unbundling but to unbundling through the use of UDLC.

Petitioners point to several other documents that they contend demonstrate that UDLC is unnecessary or that IDLC can be used to unbundle standalone loops, but their references to these

^{50/} Verizon VA also explained that UDLC is more cost-effective than IDLC in locations where customers have to be served from RTs in groupings with fewer than 96 lines, because UDLC conserves costly switching resources in such cases. (VZ-VA Ex. 122 at 181; Tr. at 4171, 4556 (Gansert).)

documents are no more helpful to their position.^{51/} As a review of all the documents Petitioners introduced at the hearing in their cross of Mr. Gansert demonstrates, no documents in the record support the contention that standalone loop unbundling (or provision of non-switched services, of course) is possible using IDLC. As Mr. Gansert testified, the various documents Petitioners introduced — most of which were produced under his supervision — “[are] part of the experience that leads me to conclude that you can’t unbundle a loop using . . . the GR-303 interface.” (Tr. at 4577.) And as Verizon VA has shown, documents produced by WorldCom itself, as well as by Telcordia, demonstrate that significant issues remain to be resolved before unbundling standalone loops using IDLC could ever become a reality — something that Mr. Gansert suggested may be unlikely at any point in time given the move away from DLC technology into packet switching. (VZ-VA Br. at 89-92; Tr. at 4084-85, 4585-86, 4578-81 (Gansert).)

Petitioners next seek to make their point by pointing to Mr. Gansert’s testimony that Mr. Riolo’s description of GR-303 unbundling is a correct depiction of what the industry has

^{51/} The NYNEX recommendation letter cited by Petitioners was released in 1995, before the unbundling requirements of the 1996 Telecommunications Act were even passed into law. (AT&T Ex. 124.) Not surprisingly, that document makes no mention of unbundling loops through the GR-303 interface. Moreover, that document recognizes that IDLC interfaces carry *DS1-level* digital signals “directly from the RT . . . to the interface unit within the Local Digital Switch (LDS) switch module (SM).” (AT&T Ex. 124 § 4.4.3 (emphasis added).) Because IDLC carries signals *only* at the DS1 level, it is “a physical impossibility” to provision a non-switched service (such as an alarm monitoring service) that connects a single fiber-fed loop to a copper-fed loop through the IDLC interface. (Tr. at 4078 (Gansert).) The other document cited by Petitioners in support of their argument is a presentation delivered at a Telcordia-sponsored forum whose purpose was “to talk about how GR[-]303 unbundling *might* occur,” and, far from providing evidence that GR-303 unbundling was a reality, the presentation identified a number of GR-303 deployment bottlenecks and “all the items that need to be developed in order to make it possible.” (Tr. at 4164-65 (Gansert); WCom Ex. 117 at 11.)

hypothesized. (*See, e.g.*, AT&T/WCom Br. at 136, 136 n.124, 138.) Petitioners again mischaracterize the testimony. Mr. Gansert's point was that Mr. Riolo's design had never progressed *past* the stage of the hypothetical. It is difficult to imagine how Mr. Gansert's testimony on this issue could have been any more clear:

[W]e've asked on numerous situations and certainly in this proceeding for either of the parties to identify to us either one ILEC who is actually doing this or . . . to provide us the price list and the product list of the equipment that does this. . . . If any one of the major manufacturers had a product that supported GR[-]303 unbundling in a multicarrier environment, we wouldn't have to look at three year old documents to find it. We would [be] able to go on to their Web sites and find that product. If you go on the web sites the one thing you will find is that we are down to just about one supplier, and that's Alcatel, and they don't provide this capability. You heard the letter they sent us.

So, that's all I can say. I have no objection to [Mr. Riolo's] description [of the possibility of unbundling GR-303 loops]. It just doesn't exist as a practical reality.

(Tr. at 4618-19.) Or as Mr. Gansert also testified, existing DLC technology "lacks some fundamental functional capabilities that would be needed to support [GR-303 unbundling in] a multicarrier environment." (Tr. at 4082.)

Twist the record as they might, Petitioners cannot avoid the facts: they are aware of no local exchange carrier that provides unbundled loops using the GR-303 interface (Tr. at 4619 (Riolo)), and no DLC equipment is currently available from any manufacturer that has the capabilities for such unbundling. (Tr. at 4583 (Gansert).) Given the Commission's express mandate that TELRIC costs be based on "currently available" technology,^{52/} it would be absolutely improper to consider the entirely speculative cost reductions that Petitioners contend

^{52/} 47 C.F.R. § 51.505(b)(1)

would be possible were their hypothetical technological capabilities and the necessary equipment suddenly to materialize.^{53/}

b) Petitioners Incorrectly Assert that the Forward-Looking Network Would Not Include Any TR-008 IDLC.

Petitioners argue that a forward-looking cost study should not include any TR-008 IDLC, because “a new entrant would employ exclusively GR-303.” (AT&T/WCom Br. at 134.) But a hypothetical new entrant would not use 100% GR-303 to the exclusion of TR-008, as Petitioners contend. As Mr. Gansert pointed out, even such a carrier would find it more cost-effective to use a combination of GR-303 IDLC and TR-008 IDLC, together with the requisite amounts of UDLC. (Tr. at 4171-72, 4556.) Moreover, it clearly would not be efficient for Verizon VA to deploy 100% GR-303 IDLC in its network; in fact, Verizon VA’s engineers have determined that no additional GR-303 should be deployed at all. Given the advent of packet switching, investing in GR-303 at this late stage would make little sense. The 10% GR-303 that Verizon

^{53/} Petitioners attempt to minimize the significance of the obstacles to GR-303 unbundling and even blame Verizon for the lack of necessary DLC functionality to support GR-303 unbundling. (See, e.g., AT&T/WCom Br. at 139 (claiming that “similar concerns have existed with other technologies and have been readily resolved”); AT&T/WCom Br. at 140 (claiming that “Verizon has lacked the incentive to work with vendors on GR-303”).) Both claims are contradicted by the overwhelming weight of the evidence in these proceedings. (See, e.g., VZ-VA Ex. 122 at 78-80 (describing Verizon’s extensive involvement in trying to resolve numerous issues with GR-303 unbundling); Tr. at 4083-84 (Gansert) (describing the “extraordinarily complicated” GR-303 specifications document and “continuous problem[s]” with getting new features developed); Tr. at 4084-86 (Gansert) (explaining *vendors’* lack of incentive to invest in developing GR-303 technology).) Moreover, Petitioners have made no allowance for the additional costs that undoubtedly would be associated with “resolving” these outstanding issues, assuming it even could be done. (VZ-VA Ex. 122 at 82.)

VA assumed therefore exceeds anything Verizon VA will ever achieve.^{54/} (Tr. at 4087, 4154, 4156-59 (Gansert).)

2. Verizon VA's Trench and Conduit Sharing Experience Represents the Best Measure of Achievable Sharing Opportunities for the Forward-Looking Network.

AT&T/WorldCom's structure sharing arguments are predicated entirely on the contention that what Verizon VA actually has experienced, and what carriers, utilities, and other entities in the real world actually do, are outweighed by unsubstantiated speculation about what Petitioners think should be the case. As Verizon VA has shown, however, Petitioners' speculation is entirely illogical.

As Verizon VA has explained, its cable and structure inputs reflect its experience sharing trench and conduit investment with third parties. This experience has shown structure sharing opportunities to be quite limited, as other parties tend not to want to shoulder costs that they know Verizon VA must incur, particularly given that Verizon is required to lease conduit capacity to them at steeply discounted rates. (*See* VZ-VA Br. at 100-03; VZ-VA Ex. 122 at 145-47; Tr. at 4380-81 (Gansert).) Petitioners seek to discredit Verizon VA's experience by contending that Verizon VA has "had little incentive to participate in structure-sharing arrangements since such sharing would have reduced the underlying ratebase upon which their rates of return were computed." (AT&T/WCom Br. at 174.) However, the structure sharing

^{54/} Although Petitioners claim that "Verizon's own planning guidelines . . . show that Verizon will deploy GR-303 in the future" (AT&T/WCom Br. at 143), this, again, misrepresents the record. To the contrary, Verizon VA's witnesses have repeatedly explained that Verizon's guidelines no longer call for deploying *any* GR-303 in the Virginia network. (*See, e.g.*, Tr. at 4157 (Gansert); VZ-VA Ex. 122 at 84.)

experience included in Verizon VA's cable and conduit investment data reflects only installation projects undertaken long after Verizon VA became subject to price cap regulation in Virginia.^{55/} Under price caps, Verizon VA has had a significant incentive to share structure costs wherever practicable. Even with these incentives and municipal regulations encouraging coordination among trenching parties, in Verizon VA's extensive experience installing buried cable and conduit in Virginia, trench and conduit sharing opportunities have been limited. (VZ-VA Ex. 122 at 145-47.) Nor did Mr. Riolo have any evidence that any carriers have ever had structure sharing opportunities as pervasive as those he hypothesizes: he admitted that he was unaware of the extent to which AT&T, WorldCom, or any other CLEC was able to find third parties to share trenching or any structure costs. (Tr. at 4546-47.)

AT&T/WorldCom contend that in the forward-looking network, new structure sharing opportunities would magically arise.^{56/} (AT&T/WCom Br. at 174.) However, they have provided no basis for the structure sharing explosion that they envision. Mr. Riolo's speculation that "20 to 30 people" are waiting to share Verizon VA's trenching costs strains credibility particularly given that Verizon VA is required to bear the cost of installing its own cables and those other entities are entitled to lease conduit from Verizon VA at below-cost rates.^{57/} (Tr. at

^{55/} Verizon VA's conduit investment data reflects projects from the years 1996 through 2000, and Verizon VA's buried cable investment data reflects projects for the years 1997 through 1999. (VZ-VA Br. at 97 n.99; VZ-VA Ex. 122 at 85, 113, 113 n.96.)

^{56/} Though AT&T/WorldCom mention sharing of poles in their brief, they do not propose any adjustments to Verizon VA's pole sharing factor. (AT&T/WCom Br. at 175.)

^{57/} Mr. Riolo's speculation that a host of road widening jobs will develop and present significant new sharing opportunities (AT&T/WCom Br. at 177; Tr. at 4388 (Riolo)) is not based on any evidence. The fact that Petitioners assume that the network will be rebuilt does not mean that the cities themselves and all the roadways in the service area will be rebuilt. And even if a

4386-87 (Gansert).) Even if the clock were somehow rolled back and cable companies and utilities suddenly found themselves without existing networks at precisely the same time as the mythical new forward-looking network were being built, it is unclear why those entities would choose to share Verizon VA's structure costs rather than simply leasing capacity from Verizon VA at far lower rates.

Moreover, while Petitioners cite to the *Tenth Report and Order* to suggest that the Commission should accept their absurd contention that all utilities would suddenly need new networks when the forward-looking network were rebuilt (AT&T/WCom Br. at 178), that order does not state that it is appropriate to assume *increased* sharing of the rebuilt network. What it states is that "it is necessary to assume that the telephone industry will have *at least the same opportunity* to share the cost of building plant that existed when plant was first built."^{58/} Verizon VA's structure sharing experience reflects precisely the opportunities that were available to share structure investment costs when the plant was built — and that experience was, as noted above, limited. Neither the *Tenth Report and Order*, nor practical experience, nor logic, supports Petitioners' assertion that there would be significantly more structure sharing in the forward-looking network.

handful of roads in Virginia were widened in the future, the impact that structure sharing along those routes would have on network-wide plant investment would be negligible.

^{58/} Tenth Report and Order, *In the Matter of Federal-State Joint Board on Universal Service, In the Matter of Forward-Looking Cost Mechanism for High Cost Support for Non-Rural LECs*, FCC 98-304, 14 FCC Rcd 20156 (Rel. Nov. 2, 1999) ("*Tenth Report and Order*") at 20261 ¶ 244 n.504 (emphasis added).